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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,166	11/30/2001	Bin Zhao	12569-15/NEC	4798

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EXAMINER

JUBA JR, JOHN

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 12/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/016,166

Applicant(s)

ZHAO, BIN

Examiner

John Juba

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

As a matter of course, the examiner has considered all of the references in parent application serial number 09/ 876,647 that were of record as of December 10, 2002. If Applicant wishes these references to be listed on the front of any patent issuing from the instant application, then a list of such references should be submitted in accordance with 37 CFR 1.98 (a)(1).

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second interleaver and its arrangement with respect to polarizer (12) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2 and 5 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 2 and 5 contain a generic recitation of phase delays in first and second stages wherein a difference between Γ in the first stage and Γ' in the second stages is permitted to be any number of integer values. However, embodiments are disclosed in which the *net* phase delays for elements in the first and second stages are shown to differ, each and every embodiment is based on a design relying on the same fundamental phase delay (Γ). That is, the specification is enabling only for embodiments in which Γ and Γ' are equal. The examiner can discern not even one working embodiment to support the species of $l = \pm 1, 2, 3, \dots$, as recited. Given that the net phase delay in each element is a critical variable, there will be myriad values for the difference ($\Gamma - \Gamma'$) for which the recited structure is inoperative in achieving a dispersion in each stage that is countervailing to the dispersion in the other stage. Thus, in order to make and use one of these species, one of ordinary skill would be left to undue experimentation.

Claims 2 – 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As depending from claim 1, each of claims 2 – 4 recites first and second interleavers, and then tabulates orientations for a “second stage”. Thus, the claims are ambiguous as to whether the assembly comprises two single stage interleavers, one single stage and one double stage interleaver, or two double stage interleavers.

Each of claims 2 – 5 tabulates values from which the angular orientations and phase delays “are selected”. First, it is not clear that each of the recited angles corresponds in order to each of the recited first stage phase delay. Secondly, since not all of the angular orientations are stated in ascending order, it is not clear in what order the phase delays are to be arranged. Thirdly, since there is no positive recitation of each of the stages as comprising three elements, it is not clear how many times each of the recited values may be used. When read in light of the specification (para. [0102]), it appears that the third element can be omitted and the “table is still true.” Fourthly, since there is no clear designation of designs along the ordinate, it is not clear whether a value for each column may, at the same time, be selected from any row. For example, may the set of first stage phase delays in the first row be used with the set of second stage phase delays in the second row?

Claims 2 and 5 are confusing or incorrect in the recitation relating Γ , Γ' , and ℓ . The difference between Γ and Γ' is said to take on integer values. This suggests that Γ and Γ' are given in units of waves. However, the phase delay may include an additional phase shift of a multiple of π radians. Thus, it is not clear whether the difference between Γ and Γ' is to be given as an integer number of waves or radians.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The foregoing is a quotation of the appropriate paragraph of 35 U.S.C. § 102(e) in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action. See attachment.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Cheng, et al (U.S. Patent number 6,396,609). Referring *for example* to Figure 11 and the associated text, Cheng, et al disclose first (30) and second (960) “interleavers” wherein the dispersion versus wavelength characteristic of the first interleaver is effectively canceled with the dispersion versus wavelength characteristic of the second interleaver.

Claims 1, 2, and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang, et al (U.S. Patent number 6,441,960). Referring *for example* to Figures 4A – 4C, and Figure 7 along with associated text, Wang, et al disclose first (403) and second (407) “interleavers” wherein the dispersion versus wavelength characteristic of the first interleaver is effectively canceled with the dispersion versus wavelength characteristic of the second interleaver.

With particular regard to claims 2 and 5, the examiner relies upon the prior art disclosure of phase delays of 1860 waves and 3720 waves in the first stage, 1860 waves and 3720 waves in the second stage and the related angular orientations of 45° , -15° , 45° , and -15° , respectively. In terms of the claimed structure, this anticipates the values tabulated for the second row, given $\Gamma = 1860$ and $\Gamma' = 1859$, such that

the first stage phase delays are Γ , with $m_1=0$ and 2Γ , with $m_2=0$; while

the second stage phase delays are Γ' , with $k_1 = 1$ and $2\Gamma'$ with $k_2=2$.

In this manner it can be said that $\Gamma - \Gamma' = (2l - 1)$, with $l = 0$.

Allowable Subject Matter

Claims 3 and 4 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art, taken alone or in combination, fails to teach or to fairly suggest, *in combination*, the particular arrangements of phase delays and angular orientations recited in claims 3 and 4. In reading the tables, it has been understood that, in a given row, the recited second stage orientations for the parallel component must be satisfied while *at the same time*, the second stage orientations for the orthogonal component must be satisfied.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 3 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 15 of U.S. Patent No. 09016,784. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 3 generically tabulates values for the phase delays and angular orientations more specifically recited in copending claim 15. That is, claim 3 generically dominates the copending species claim. Thus, a structure which infringes the copending claim, necessarily infringes application claim 3. .

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

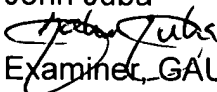
Tai, et al disclose an interleaver with the optical paths arranged to minimize dispersion.

As an intervening reference, JDS Uniphase (EP 1 152 265 A2) disclose a dispersion compensated interleaver comprising birefringent elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (703) 308-4812. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on Mon.- Thu., 9 - 5. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

John Juba

Examiner, GAU 2872

December 11, 2002

Attachment

Recent Statutory Changes to 35 U.S.C. § 102(e)

On November 2, 2002, President Bush signed the 21st Century Department of Justice Appropriations Authorization Act (H.R. 2215) (Pub. L. 107-273, 116 Stat. 1758 (2002)), which further amended 35 U.S.C. § 102(e), as revised by the American Inventors Protection Act of 1999 (AIPA) (Pub. L. 106-113, 113 Stat. 1501 (1999)). The revised provisions in 35 U.S.C. § 102(e) are completely retroactive and effective immediately for all applications being examined or patents being reexamined. Until all of the Office's automated systems are updated to reflect the revised statute, citation to the revised statute in Office actions is provided by this attachment. This attachment also substitutes for any citation of the text of 35 U.S.C. § 102(e), if made, in the attached Office action.

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 prior to the amendment by the AIPA that forms the basis for the rejections under this section made in the attached Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

For more information on revised 35 U.S.C. § 102(e) visit the USPTO website at www.uspto.gov or call the Office of Patent Legal Administration at (703) 305-1622.